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Grazing Behavior of Yearling Horses. II. Selective or Spot Grazing of Bermudagrass

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Summary

Selective or spot grazing of pastures by yearling horses has long been observed but not quantitated to date. Six stock horse yearlings averaging 650 lbs were assigned to each of two 'Tifton 44' bermudagrass pastures from March through September 1986. Spot-grazed areas (< 2 inches in height) in both pastures were measured in mid-September. Forage available to ground level and selection samples were taken at this time. Forage available was greater, as expected in the long, less grazed areas than in the spot-grazed areas and averaged 4,500 and 1,600 lbs DM/A, respectively. Crude protein content of longer bermudagrass was also lower (18.2 percent) than grass in the short, spot-grazed areas (20.6 percent). The total area of the pasture that was spot grazed was approximately 38 percent and was similar for both pastures.

KEYWORDS: Horses/grazing behavior/bermudagrass/selective grazing.

Introduction

Selective or spot grazing by yearling horses had been observed in a grazing trial conducted in Overton 1984. In 1986, the closely grazed areas in two pastures were distinct and sizeable enough to be measured. Therefore, a measurement of the area within a bermudagrass pasture which had been selectively grazed was quantified.

Procedures

Three stock horse yearlings averaging 650 lbs were assigned to each of two 'Tifton 44' bermudagrass pastures of approximately 1.4 acres from March through September 1986. From March through May, 'Elbon' rye and 'Marshall' ryegrass made up the major portion of the available diet, while from May through September, bermudagrass was grazed exclusively in this sod-seeded pasture system. Pastures were fertilized with 60-60-60 (N-P_2O_5-K_2O) in late November and 50 lbs/A N at approximate 6-week intervals throughout the grazing period. During mid-September, measurements of the largest selective grazing areas in each pasture were taken to determine the percentage of each pasture that was closely grazed. Forage available to ground level of the closely or frequently and the infrequently grazed areas were taken at this time. Forage samples were clipped adjacent to areas grazed by the horses to estimate the actual diet selected, and subsequently dried, ground, and stored for later chemical analysis.

Results and Discussion

Pastures were stocked at approximately two yearlings/A (1,400 lbs bodyweight per acre) since three yearlings occupied each of the 1.4 A bermudagrass pastures for the entire trial period. This is consistent with a light or conservative stocking rate of cattle in similar pastures as described by Rouquette et al., 1984, which allowed for selective grazing and hence *ad libitum* intake potential of bermudagrass by the yearling horses.

In Table 1, forage available to ground level (0-inch height) and crude protein content of bermudagrass pastures are presented for the frequently grazed (short) and infrequently grazed (tall) areas. Obviously, the forage available in the infrequently grazed areas was greater than the closely grazed areas. Also, crude protein percentage of the bermudagrass samples taken from the closely grazed areas was higher (20 percent) than the infrequently grazed areas (18 percent). This was most likely due to percent leaf and the immaturity of available forage. Thus, yearlings tended to select the young, im-

TABLE 1. FORAGE AVAILABILITY AND PROTEIN OF PASTURES GRAZED BY YEARLING HORSES

	PASTURE			
	1		2	
	Short Forage	Tall Forage	Short Forage	Tall Forage
Forage Availability (lb DM/A)	1,838	5,102	1,234	4,058
Crude Protein (%)	20.5	18.0	20.7	18.4

TABLE 2. CALCULATED AREAS IN BERMUDAGRASS PASTURES WHICH WERE SELECTIVELY GRAZED BY YEARLING HORSES

	Total Area	Short Forage			Tall Forage		
Pasture	ft²	ft²	acreage	%	ft²	acreage	%
1	64,275	24,039	.55	37.4	40,236	.93	62.6
2	62,184	24,127	.55	38.8	38,057	.88	61.2

mature bermudagrass that tended to be much more uniform in height than the infrequently grazed areas (Table 2). Also, there were negligible defecation spots in the closely grazed areas, while there were fairly random, widespread defecation spots in the infrequently grazed areas. This behavior has been shown previously in thoroughbred horses grazing in paddocks (Francis-Smith, 1977).

After measurement of grazing areas within each pasture, 37.4 percent of pasture 1 was closely grazed and 38.8 percent of pasture 2 was closely grazed (less than 2 inches in height). These pastures were very similar in size, with pasture 1 and 2 measuring 1.48 and 1.43 acres, respectively. It was very interesting that with the similar size and percentage of close grazing, that a total of .55 acre was selectively grazed in each pasture.

In Figure 1, a schematic representation of the selectively grazed areas in each pasture is presented. It did not seem unusual that the alleyway ends of the pasture were short and selectively grazed, because of the presence of the watering system and the gate, along with the closest visual, auditory, and olfactory contact with the nearest pastured horses. However, it was not easily understood why the edges of both pastures were selectively grazed. The behavior and activity of the horses to move around the outermost edge of the enclosure (around the fence line) may have been the areas where grazing was first initiated. After grazing once began, the horses continued to return to the previously grazed areas on a priority basis due to the physical and chemical nature of the regrowth bermudagrass forage.

Regardless of the cause(s), selective or spot grazing has been observed in yearlings grazing rye-ryegrass and bermudagrass pastures in East Texas as well as mature horses grazing paddocks in England (Francis-Smith, 1977). From the measurements made at Overton, it can be

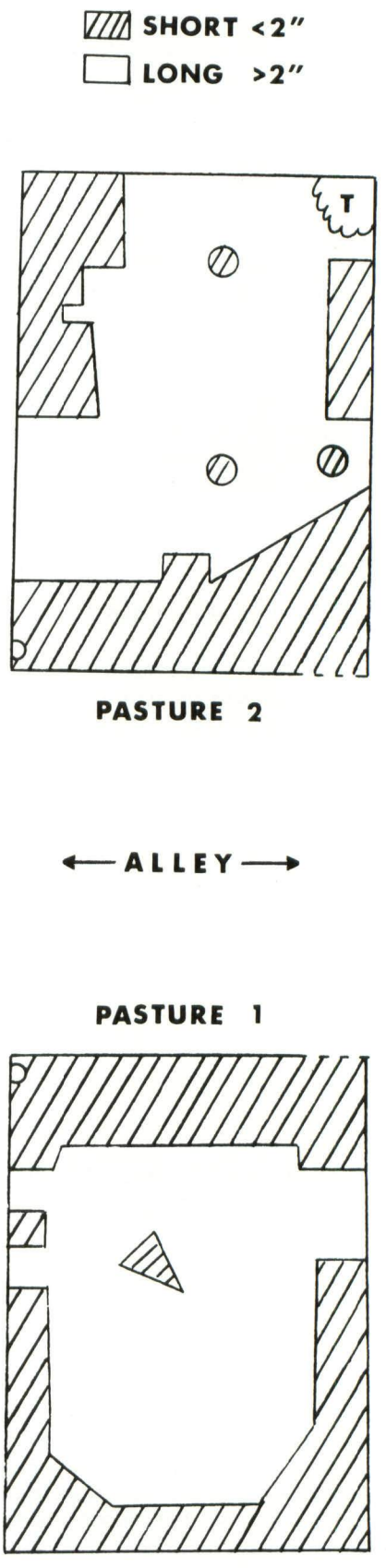

Figure 1. Schematic Representation of spot grazing of bermudagrass pastures.

estimated that close grazing areas (<2 in.) may often comprise 30 to 40 percent of the pasture area being grazed by horses stocked at levels approaching 1,400 lbs body weight per acre. Management techniques were not employed in this continuously grazed study to attempt to alter or change the impact of the selective grazing behavior. The first consideration may be given to the forage and its vigor and regrowth potential under these severe defoliation regimens. In general, the hybrid bermudagrasses have shown to be very resistant to frequent defoliation under grazing conditions. Thus, for stand maintenance or forage survival, management practices to change the distribution of grazing should be employed based on forage specie and desired performance. Possible management techniques to alleviate the selective grazing areas for a season-long period are to rotate pastures with different classes of livestock and/or shred or mow pastures. These techniques may prevent the complete destruction of forage(s) in a pasture. Bermudagrass pastures in the humid regions of the southeastern United States are resistant to stand destruction via grazing and probably represent one of the most reliable, permanent pastures for horses. Additional studies are required to ascertain the full impact of this inherent, selective grazing behavior of horses on different forages.

Literature Cited

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